Do personal conditions and circumstances surrounding partner loss explain loneliness in newly bereaved older adults?

van Baarsen, B.; Smit, J.H.; Snijders, T.A.B.; Knipscheer, C.P.M.

published in
Ageing and Society
1999

DOI (link to publisher)
10.1017/S0144686X9900745X

document version
Publisher's PDF, also known as Version of record

Ageing and Society, **19**, 1999, 441–469. Printed in the United Kingdom

Do personal conditions and circumstances surrounding partner loss explain loneliness in newly bereaved older adults?

BERNA VAN BAARSEN*, JOHANNES H. SMIT*,
TOM A. B. SNIJDERS** and KEES P. M. KNIPSCHEER*

ABSTRACT
This longitudinal study aims to explain loneliness in newly bereaved older adults, taking into account personal and circumstantial conditions surrounding the partner's death. A distinction is made between emotional and social loneliness. Data were gathered both before and after partner loss. Results were interpreted within the framework of the Theory of Mental Incongruity. The findings reveal that being unable to anticipate the partner's death is related to higher levels of emotional loneliness. Standards of instrumental support, measured indirectly by poor physical condition, lead to stronger emotional as well as social loneliness. Standards measured directly by importance attached to support or contacts result in higher emotional loneliness but, unexpectedly, in lower social loneliness. Furthermore, difficulties with establishing personal contacts, caused, for instance, by social anxiety, add to loneliness. It is concluded that circumstances related to the partner's illness may contribute to emotional loneliness after bereavement. Moreover, the results highlight the importance of taking coping attitudes into consideration for a better understanding of how newly bereaved older adults adapt to the loss of a partner.

KEY WORDS – longitudinal, bereavement, widowhood, loneliness, older adults.

Introduction

Bereavement is one of the most radical life events one can experience and it can have far-reaching consequences for the psychological and physical well-being of the person in question (Holmes and Rahe 1967). The death of a marriage partner implies the loss of a source of

* Department of Sociology and Social Gerontology, Vrije Universiteit Amsterdam, the Netherlands.
** Department of Statistics, Measurement Theory and Information Technology, University of Groningen.

emotional and practical support that has been available during marriage. In addition to sorrow and loneliness, widows and widowers are liable to experience loss of status and income. The bereaved have to take up unfamiliar daily activities and to make decisions about the future themselves (Glick *et al.* 1974). Widowhood at older age may be even more stressful because of poorer physical and mental health, retirement, and other changes in meaningful social relationships caused by loss of family and friends (Coleman 1990).

Loneliness refers to the absence of specific social contacts and an experienced lack of intimacy or support in social relationships (De Jong Gierveld 1989); well-being is a broader concept and should be interpreted as an evaluation of the overall quality of life. Previously, several factors have been identified in explaining variations in feelings of loneliness and well-being in the conjugally bereaved.

First, the availability of a differentiated personal network is important in the mourning process and to the well-being of a widowed person (Bankoff 1983; Walker *et al.* 1977). Researchers often stress the importance of sensitive, supportive reactions of others to both positive and negative emotions and to the needs of the bereaved person (Maddison and Walker 1967; Raphael 1984). This is in line with Stevens (1989), who observed that the evaluation of the quality of the support is associated with well-being in relationships, rather than quantitative measures of interaction, such as contact frequency and the size of the network.

Secondly, desires or expectations about personal relationships were found to influence feelings of loneliness. Widow(er)s who attach more importance either to 'a partner relationship' or to 'other ties' feel more lonely than those who regard these relationships to be less essential (Dykstra and De Jong Gierveld 1994). Strong expectations about social contacts or support can lead to disappointment, as high needs are more difficult to meet.

The experience of health problems and social anxiety also provoke loneliness (Dykstra and De Jong Gierveld 1994). Both factors are negatively associated with perceptions of physical and mental capacity to acquire, develop, and maintain relationships. Many researchers have demonstrated that health restrictions directly, and indirectly through impaired social interaction, increase the likelihood that widow(er)s will feel lonely and be dissatisfied with life (Stevens 1989). The same holds for social anxiety. Socially anxious people 'are more likely to fear rejection, to feel inhibited in their interaction with others, and to lack assertiveness' (Dykstra 1990: 156).

Apart from the above factors, some researchers have pointed out that

the nature and quality of the lost relationship are important in the mourning process. Ambivalent relationships are said to be difficult when feelings of bitterness, regret, love and guilt alternate with each other (Raphael 1984). Contrary to Parkes and Weiss (1983), Stevens (1989) did not find a relationship between evaluation of the marriage and well-being after bereavement. Marital dependency, on the other hand, did correlate negatively with the evaluation of the widow's present life.

The possible effect of anticipating a partner's death on feelings of loneliness and well-being following the loss is not easy to understand. The risk perception of a partner's death may depend on information about the nature of the illness and/or the death process. Sudden, unexpected and unanticipated deaths are more likely to be associated with traumatic outcome (Raphael 1984). A violent death, caused by an accident for example, may be particularly stressful because the bereaved will have no opportunity to say goodbye. A slow death, on the contrary, gives the partners more time to deal with unfinished business (Walsh and McGoldrick 1991) and it provides more opportunities to make gradual (traditional) role changes which may be helpful in the adaptation (Raphael 1984). Nevertheless, lingering deaths are stressful too. Earlier experiences with actual or threatened loss within the family may intensify the 'salience of anticipatory loss' (Rolland 1991: 145). Caring for the ill partner and seeing the partner's suffering is likely to be emotionally disturbing for the partner and the family, and gives a great deal of uncertainty about the future. In recent years, research has sought to demonstrate the effect of anticipation on the outcome of conjugal bereavement, but results are inconsistent and sometimes no effect could be found (Clayton *et al.* 1973; Schut 1992; Stevens 1989; Stroebe and Stroebe 1993).

There is a great variety of ways in which widow(er)s experience loneliness (Lopata 1969, 1979). Weiss (1973) has identified two basic forms: loneliness through social isolation and loneliness through emotional isolation. The former describes loneliness caused by a lack of social integration. The latter refers to an absence of a reliable emotional attachment or, as Stevens puts it, 'an utter sense of aloneness whether or not companionship is accessible' (Stevens 1989: 28).

Findings from empirical research show that the loneliness reported by widow(er)s is linked to personal loneliness and 'unrequited love' rather than to a sense of social isolation (Raphael 1984: 199). It would be of particular interest therefore to understand which factors explain loneliness through social isolation more accurately than emotional isolation and vice versa.

A second shortcoming of many studies that provide insight into the factors that might explain loneliness among the bereaved is that they are based on cross-sectional data. Although this can be useful, for example in comparing a group of widow(er)s with a group of respondents who still live with their partner (Dykstra and De Jong Gierveld 1994), the cross-sectional approach suffers from some limitations. A key problem is that causes and effects cannot be established with certainty. Stevens (1989) points out that, with longitudinal as opposed to cross-sectional data, the *course* of the adaptation to the loss can be better examined.

The present study was designed to meet these objections. The study is unique for several reasons. First, it is longitudinal: a group of widows and widowers were followed for two-and-a-half years. Furthermore, responses were not only gathered after the partner's death, but also *before*. A dataset like this provides us with the opportunity to explain loneliness after bereavement on the basis of loneliness or support experienced before partner loss. Thirdly, this paper extends the explanation of loneliness by making a distinction between emotional and social loneliness.

In this paper we will not focus on sex differences in loneliness experienced after bereavement. Although it has been suggested that women differ from men in their skills of daily living (Lund et al 1993), and resources (Stevens 1995), sex differences in outcome of bereavement are often negligible (Lund et al 1993; Stevens 1995; Stroebe and Stroebe 1993). Without denying the potential importance of sex differences in this respect, we feel that the factors included in this paper will be relevant for both widows and widowers in explaining loneliness shortly after bereavement.

Theoretical framework

The aim of this study was to interpret the data within the framework of the Theory of Mental Incongruity (TMI). The theory was introduced by Münch (1972) and elaborated and modified by Tazelaar (Tazelaar 1983; Tazelaar and Wippler 1985). The TMI is a cognitive motivational theory about balance (congruence) in the mental system of individuals. The theory has been applied to several research issues in which adaptation and reorganisation following major life transitions, such as divorce, unemployment and widowhood, were of central importance (Broese van Groenou 1991; Dykstra 1990; De Jong Gierveld and Dykstra 1993; Stevens 1989). The TMI is not restricted

to specific categories of people (Dykstra and De Jong Gierveld 1994). Changes in the lifecourse that require adjustment may occur at any age, but some life transitions are more characteristic of later periods in the lifespan. Raphael (1984) describes bereavement as a more expected or anticipated experience for older ('on-time') than for younger ('off-time') adults. In contrast with other psychological theories that take into account methods of coping (Lazarus and Folkman 1984; Stroebe *et al.* 1996), the TMI does not focus on the processes underlying adaptation. Instead, it specifies conditions under which adaptational responses are, or are not, likely to occur. In the next section, a brief and partial outline of the theory is given. For a comprehensive description of the theory applied to older and younger adults, see De Jong Gierveld and Dykstra (1993).

According to the TMI, the behavioural disposition of a person is formed by an interrelation between cognitions and standards, the so-called *mental system*. Cognitions refer to knowledge and perceptions of the situation, *i.e.* to one's actual experiences. Standards, on the other hand, describe the desires, norms and values, in short what one feels the situation ought to be. The theory assumes that when a standard is not in line with the related cognition(s) there will be incongruity in the mental system.

Mental incongruity can exist in the primary and the secondary domains of the mental system. The primary domain is defined by the specific problem under study, in this case bereavement. The loss of a partner will produce incongruity in the primary domain when there is a discrepancy between the primary standard ('I need a marriage partner') and the primary cognition of the actual loss situation ('I do not have a marriage partner'). Primary incongruity is greater the more the standard is dominant. The secondary domain refers to those secondary dimensions that are affected by changes in the primary domain. The death of a partner may, for instance, have consequences for the financial situation or the social contacts of the newly bereaved. When there is a discrepancy between the cognition(s) of the secondary dimensions (*e.g.* having a low income) and the secondary standard(s) (*e.g.* a desire for a higher income) there will be incongruity in the secondary domain.

The TMI makes a distinction between fixed and non-fixed secondary dimensions. Non-fixed secondary dimensions are specific to the problem under study and may be identified on the basis of earlier research (*e.g.* perceived advantages of having a partner; Dykstra 1990). Fixed secondary dimensions, on the other hand, are relevant to *all* applications of the theory; they are regarded as fundamental in

practically any motivational question. They are income, time, status/prestige, social contacts, perceived social pressure and perceived opportunities. Regarding the latter two dimensions, the TMI, like the Cognitive Theory of Ageing (Thomae 1970), stresses the importance of a subjective, perceptual element in the explanation of incongruity (reduction). In general, fixed and non-fixed secondary dimensions identify conditions under which the primary mental incongruity is said to be higher or lower. Thus, by introducing secondary elements in the explanation of mental incongruity, the TMI goes beyond the natural explanation that a discrepancy between an inner state (*i.e.* desired situation) and outer conditions (*i.e.* actual situation) leads to incongruity. A general hypothesis of the TMI, including primary and secondary elements, is:

Given the primary cognition of the situation, a more dominant primary standard will result in a greater **mental incongruity**, and this incongruity will be even greater when secondary conditions are less advantageous.

In addition to introducting the interrelations between the primary domain and the dimensions in the secondary domain, thereby leading to a better understanding of how mental incongruity is produced, the theory formulates several postulates about when and how mental incongruity is likely to be reduced. As a result, the TMI can be used to explain variations in incongruity reduction as well as variations in existing incongruity. We are planning further research on older widow(er)s' adaptive behaviour aimed at reducing mental incongruity. In this article we use the TMI in explaining *existing* mental incongruity experienced by older people shortly after bereavement.

From theory to research hypothesis

According to the TMI, the death of a partner creates mental incongruity in a bereaved person. The *loneliness* a widow(er) experiences after the loss of the partner is interpreted as an incongruity in personal relationships, a 'discrepancy between the relationships one has and the relationships one wants' (Dykstra and De Jong Gierveld 1994: 245).

Regarding the primary cognition, we presumed that shortly after a partner's death cognitions of support and personal relationships are uniquely related to the loss of the partner. Thus, in our measures we focused primarily on the loss of the partner's companionship and support.

In operationalising the dominance of the primary standards we took

into account both the partner standard and the standards of other relationships. Relationships with others may be a source of incongruity when the widow(er)'s expectations of support are not met by the actual support received, for example when friends 'withdraw from contact following the husband's death' (Stevens 1989: 202). The partner standard was assessed by means of an indirect measure: we assumed that the opportunity to anticipate the partner's death influences expectations (*i.e.* standards) of support from the partner: that more time to prepare and cognizance of the probable death might lower initial expectations about support from the partner. The standards on other relations were measured in both an indirect and a direct way. In the indirect measure, we stressed the notion that widow(er)s with a poor physical condition may need more instrumental support from others than those who are able to be self-supporting. In particular, newly bereaved persons with poor physical health may have strong expectations that they will receive instrumental support from others, as a necessary compensation for the lost instrumental support of the partner. The direct measure assesses the importance that widow(er)s attach to support from or contact with others. If a person attaches more weight to support or personal contacts, the related desires or expectations will probably be stronger.

In line with the TMI – given the loss situation – it can be predicted that (i) the greater the perceived loss of the partner's companionship and support (*i.e.* primary cognition), the higher the expectation of support from the partner and other relationships, and (ii) the greater the importance attached to support from others (*i.e.* a more dominant primary standard), the higher the levels of loneliness after bereavement (*i.e.* the larger the mental incongruity). On the basis of the operationalisations of the cognition and related standards, we formulated the *first hypothesis* as follows:

Given the loss of the partner,

- the greater the perceived loss of the partner's companionship and support,
- the fewer the opportunities to anticipate the partner's death,
- the worse the physical condition and/or
- the greater the importance attached to support from or contact with others, then
- the stronger the feelings of loneliness after bereavement.

With respect to the secondary domain, we distinguished several fixed structural opportunities as well as fixed and non-fixed personal opportunities. Structural opportunities give an indication of the available social contacts during marriage that might develop into

regular and important relationships. Potential sources of contact and support may compensate for the lost partner relationship. We used four measures of structural network conditions during marriage: size, support, composition, and the representation of children in the network.

Regarding personal conditions, two indicators of the perception of personal opportunities, relating to social involvement, were used: perceived social anxiety and social dependence during marriage. First, a newly bereaved person with high social anxiety will probably realise that acquiring support from others will be very difficult in the absence of the partner. Secondly, we expect that a widow(er) who was socially dependent on the partner's personal contacts will be less likely to maintain those contacts or initiate new contacts with others. The social dependence during marriage should be seen as a non-fixed secondary condition.

In agreement with the TMI, in addition to the effects mentioned in the first hypothesis, the levels of loneliness after bereavement will be higher when the structural and personal opportunities to initiate, maintain and develop personal contacts (*i.e.* secondary dimensions) are less favourable. Our operationalisations of the secondary conditions resulted in a *second hypothesis*:

Feelings of loneliness after bereavement will be even stronger, *if*

- the network during marriage had been smaller,
- the support received from the network during marriage had been less,
- the composition of the network during marriage had been less diverse,
- the representation of children in the network during marriage had been smaller,
- social anxiety had been higher and/or
- social dependence during marriage had been higher.

In explaining the extent to which newly bereaved older persons feel lonely after bereavement, we also wanted to identify differentiating factors explaining emotional and social loneliness. Our *third hypothesis* was that the cognition and standards which are directly related to the loss of the partner, as well as the secondary personal conditions, will be particularly important in explaining individual differences in emotional loneliness. On the other hand, our *fourth hypothesis* was that social loneliness is better explained by secondary structural conditions. Finally, because poor physical health inhibits people in their social interaction with others, *hypothesis five* was that the physical condition of the bereaved is expected to affect both types of loneliness.

The study

Data collection, response and procedure

The WALS project (Widowhood Adaptation Longitudinal Study) is a sub-study of the NESTOR survey on 'Living arrangements and social networks of older people'. In the NESTOR study (Knipscheer *et al.* 1995), 4,494 subjects, aged 55–89 years, were interviewed in 1992. About 60 per cent of the respondents who participated in the NESTOR study were married, and made up the baseline group for the present study.

After the base-line interviews (T_0), married respondents were monitored on possible major life events, including the death of their partner. Subjects received a checklist every six months until mid-1995. During the monitoring period, 239 respondents lost their partner and thus became potential participants for our follow-up study. In March 1996, 143 T_1 interviews had been realised. T_1 interviews were held at about six months after the partner's death. The response rate at T_1 is 71.3 per cent. Non-response is explained as follows. A total of 34 subjects were not contacted because they had been bereaved for longer than seven months, 15 respondents had died before we approached them, and 19 participants were physically or mentally not able to participate. These 68 subjects were thus ineligible. In addition, 28 respondents refused to take part in the study for some other reason. The interval between T_0 and T_1 was on average 2.5 years (with a standard deviation of 0.88 years).

The data were collected by means of face-to-face interviews. Before the interviews took place, bereaved participants received a letter in which they were informed about the WALS study and introduced to the interviewer. Shortly after receiving the introductory letter, they were contacted by the interviewer and asked to co-operate. The interviews were undertaken by experienced female lay-interviewers at the respondent's home. The interviewers were selected from a larger pool on the basis of empathetic and social skills, and they followed a training programme on the topic of widowhood.

Participants

The group of 143 respondents is composed of 88 widows (62 per cent) and 55 widowers (38 per cent). On average respondents had been married to their partners for 46 years. The duration of marriage for widowers was significantly longer than for widows (48.7 as against 45.1 years; $p < 0.05$). The mean age of the respondents at the time of the

partner's death, was 75 years. Women were at that time, on average, five years younger than the men in the sample (72.6 years as against 78.0; $p < 0.001$)[1].

Measurement instruments

A total of 27 variables were measured. Their names are identified in italics in the following description.

Feelings of loneliness

The extent to which people feel lonely is assessed by means of the Dutch *feelings of loneliness* scale (De Jong Gierveld and Kamphuis 1985). The scale consists of positive as well as negative items and has been used as an unidimensional scale (Loevinger's $H = 0.35$, reliability $\rho = 0.84$). It has proved to be a robust and reliable measure of loneliness (Van Tilburg and De Leeuw 1991).

Recently, there has been some debate on the unidimensional and cumulative character of this scale and it has been suggested that for each piece of new research 'one should determine once again whether the items of the scale fulfill the requirements of the Mokken model' (Moorer and Suurmeijer 1993: 1324). A Mokken Scale Analysis and a Factor Analysis (principal components with varimax rotation) carried out on the NESTOR data reveals that two subscales or factors could be distinguished. The first set of items consists of six negatively formulated items, and seems to describe *emotional loneliness*: the lack of a reliable attachment to others and the feeling of being emotionally isolated ('Often I feel rejected'). The five positively formulated items in the second set may be interpreted as *social loneliness*: the feeling one can count on others for help and support, and a sense of social embeddedness ('There are enough people I feel close to'). Loevinger's H for the emotional and the social loneliness subscales are 0.48 (reliability $\rho = 0.84$) and 0.43 (reliability $\rho = 0.77$) respectively. Factor analysis reveals that the two factors explain 53.8 per cent of the total variance in the answers to the eleven loneliness items; within each factor, items have loadings higher than 0.55, and loadings in the opposite factor are lower than 0.25 or differences in the item-loadings between the two factors are higher than 0.25. The correlation between the two subscales (corrected for attenuation) at T_0 is 0.65, and at T_1 is 0.41. Although the psychometric properties of the two subscales seem to be satisfactory, it should be noted that the division between the two sets of positively and negatively formulated items may imply that the

distinction between a social and an emotional loneliness factor may be an artefact.

Perceived loss of the partner's companionship and support

The first measure, *partner support*, is based on the instrumental and emotional support received from the partner during marriage (T_0). Secondly, participants could retrospectively evaluate the *partner relationship* on several dimensions (T_1). The scale is based on Schut (1992) and includes seven bipolar adjective pairs, like 'bad-good' and 'not supporting-supporting'. Between the adjectives a five-point ordered scale was presented. For both measures, a high score indicates a very supporting partner relationship as experienced by the respondent.

Opportunities to anticipate the partner's death

Four measures have been selected to indicate opportunities to anticipate the partner's death. To measure the *suddenness of death*, questions were asked at T_1 about the nature (whether or not ill) and course of the death process (length of illness). A low score (*i.e.* a sudden death) on these items suggests the lack of opportunity to anticipate the partner's death.

The *perceived intensity of the disease* was assessed by asking the participants whether the patient had been taken care of at home, and/or at a hospital. One or more periods of home/hospital care may sensitise people to possible consequences (*i.e.* the death of the partner). Moreover, when the patient was at home, it is conceivable that it would have been much more difficult for the partner to withdraw from the situation. We combined the scores on the basis of received care: the highest score (4) was obtained when the patient had been cared for both at home and in a hospital, whereas the lowest score (1) means that there had been no care at all. Thus, a low score suggests less opportunity to anticipate the partner's death. Note that this measurement also gives an indication of the suddenness of the death.

Respondents were also asked if they had had the *opportunity to say goodbye*. We assume that saying goodbye confronts a person with the seriousness of the illness, hence the coming death may be more readily accepted.

Finally, respondents could indicate whether during their marriage and before the partner was ill, they had engaged in *talk about death* in general. A high score ('often') may be seen as an anticipated coping attitude to a hypothetical death of the partner.

Physical condition

The measure of the physical condition of the widow(er)s is based on a subjective evaluation of different aspects associated with physical health and health problems during marriage. *ADL* (*Activities of Daily Living*) measures the extent to which respondents are physically able independently to perform daily activities, such as walking up and down the stairs. *IADL* (*Instrumental Activities of Daily Living*) is measured with the help of six questions about instrumental activities, such as 'doing daily groceries' and 'cleaning the house'. For both ADL and IADL, a low sum score means that a respondent perceives many physical restrictions.

Importance attached to support or contact

Two indicators for personal relationship standards associated with widowhood were used. To assess the *standards for support*, respondents were asked to indicate whether widow(er)s needed someone for emotional support, instrumental support or social companionship. Secondly, to measure *standards for contacts*, respondents were requested to give their opinion about the importance of having certain social contacts. The items are based upon examples from Dykstra (1990) and Stevens (1989), and distinguish between *kin* (*e.g.* 'A widow(er) has to keep in touch with her/his own children') and *non-kin* (*e.g.* 'For a widow(er) it is important to start a new partner relationship').

Structural opportunities

The number and type of personal contacts present in the networks of the respondents were identified by means of the domain-specific approach (van Tilburg 1995), using seven domains of relationships:

- household members,
- (step/foster)children and their partners,
- other relatives,
- neighbours,
- contacts through work and school,
- members of organisations (*e.g.* church) and
- other relationships (*e.g.* friends and acquaintances).

For each domain, respondents were asked to mention all persons with whom they interacted on a regular basis and who were important to them. Furthermore, characteristics of their twelve most important relationships (including the partner) were assessed.

Four measures of perceived structural opportunities were used:

- the size of the personal network during marriage,
- its composition,
- the representation of children in the network during marriage, and
- the amount of support received from their most important network members.

The *size of the network* is based on the number of relationships the respondent mentioned during the delineation of the network. At T_0, the partner was not included. In determining the *heterogeneity of the network*, we identified eight separate relationship types: children, children-in-law, siblings, siblings-in-law, 'other' kin, friends, neighbours, and 'other' non-kin. The extent of heterogeneity is calculated by the number of categories that can be filled with one or more relationships present in the network during marriage. As a result, the minimum score is 1 and the maximum score is 8.

We used two measures indicating the representation of *children in the network during marriage*. The first measure indicates whether children were excluded from the respondent's network because of death, quarrels or geographic distance. Respondents were coded as either having mentioned all children as being part of their network (1) or not (0). Subjects without children also received the score of 1. Second, because 17 per cent of the participants with children had lost one or more of their children earlier in life, an additional dichotomous variable was calculated for these loss experiences (0 = 'lost a child'; 1 = 'did not lose a child').

The *support received from the network during marriage* is assessed with regard to the core network, consisting of a maximum of 11 relationships other than the partner, with whom the contact frequency was at least once a month or higher (T_0). The score is based on the instrumental and emotional support received.

Perceived personal opportunities

The measure of *social dependence* during marriage was based on two items concerning two different aspects of dependence: (not) sharing social activities, and (not) having the same friends. We measured *social anxiety* by asking respondents about their feelings while interacting with unknown people; *e.g.* 'Do you find it easy to initiate conversations with strangers?' (Dykstra 1990).

Table 1 summarises the measurement instruments used that were based on two or more items. Some instruments were constructed with the help of a Mokken Scale Analysis[2]; relevant psychometric properties of these scales (Loevingers H, reliability ρ) are reported in the text. The

TABLE 1. *Psychometric properties of the scales.*

Scale	Number of items	Range of scores[a]	n		Cronbach's alpha	
			T_0	T_1	T_0	T_1
Feelings of loneliness	11	11–33	134	142	.78	.79
Emotional loneliness	6	6–18	135	142	.85	.71
Social loneliness	5	5–15	134	142	.80	.84
Evaluation of partner relationship	7	7–35	–	142	–	.93
Support received from partner	2	2–8	–	128	.48	–
Physical health						
ADL	4	4–20	138	143	.89	.87
IADL	6	6–30	134	131	.80	.90
Standards for contacts	10	10–30	–	134	–	.69
Kin	3	3–9	–	126	–	.45
Non-kin	4	4–12	–	140	–	.62
Standards for support	3	3–9	–	143	–	.50
Social dependency	2	2–6	–	139	–	.62
Social anxiety	6	6–18	24	138	.75	.69

[a] The scores range from low to high with regard to the measured concept

reliabilities of the resulting measurement scales (Cronbach's alpha) are given in Table 1.

Method of analysis

In testing the hypotheses we used a hierarchical step-wise regression analysis. Three regression steps were distinguished. We first entered possible influential background variables as covariates:

- the initial level of loneliness at T_0
- the time lag between T_0, the death of the partner and T_1
- other stressful life-events
- duration of marriage
- age
- gender
- income
- relocation.

The control variables that did not contribute to the explanation of loneliness ($p > .10$) were removed. In the second step, variables related to each of the primary theoretical concepts, stated in the first hypothesis were entered all at once (block procedure). When a block of measures did not add significantly to the explanation of loneliness, only one variable was retained in the analysis. When a block of variables did

TABLE 2. *Correlations between key variables*

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1. Loneliness To																			
2. Loneliness T1	.39																		
3. Emotional loneliness To	.91	.31																	
4. Emotional loneliness T1	.20	.85	.22																
5. Social loneliness To	.88	.37	.61	.12															
6. Social loneliness T1	.44	.73	.29	.26	.54														
7. Evaluation partner relation	−.55	−.09	−.59	.01	−.37	−.17													
8. Support from partner To	−.41	−.00	−.39	.13	−.35	−.17	.38												
9. Importance support	.02	.27	.06	.41	−.03	−.03	.04	.07											
10. Emotional support	−.15	.01	−.09	.21	−.22	−.27	.13	.12	.67										
11. Instrumental support	.19	.36	.16	.38	.15	.16	−.09	−.01	.74	.17									
12. Social companionship	−.03	.17	.02	.28	−.08	−.03	.09	.04	.76	.38	.32								
13. Importance contacts	−.18	−.03	−.06	.24	−.27	−.37	.10	.08	.51	.48	.21	.47							
14. Kin	−.21	−.20	−.00	.05	−.39	−.43	.06	.07	.35	.30	.18	.30	.51						
15. Talking about death	−.09	.21	−.08	.28	−.12	−.01	.12	.23	.10	.17	.08	−.01	.13	−.01					
16. Perceived intensity disease	.04	−.12	.03	−.16	.00	−.07	−.01	−.18	.03	.02	.10	−.04	.04	.07	.01				
17. Physical condition (IADL)	−.27	−.43	−.23	−.29	−.22	−.35	.09	.05	−.20	.06	−.46	.03	.34	.14	.06	.08			
18. Social anxiety	.06	.42	.05	.37	−.02	.24	−.07	.02	.28	.15	.28	.19	.13	.08	−.09	.02	−.17		
19. Support network To	−.28	−.25	−.21	−.16	−.32	−.27	.24	.20	.04	.25	−.15	.05	.20	.09	−.08	.05	.19	−.02	
20. Heterogeneity network To	−.30	−.11	−.20	−.07	−.35	−.10	.18	.09	.12	.21	−.12	.21	.34	.13	−.19	−.06	.13	.14	.40

Note: Correlations greater than .16 are significant at $p < .05$.

contribute significantly to the explanation, variables with a p-value higher than .25 were removed from the analysis. The third step included only these explanatory factors, formulated on the secondary theoretical level (hypothesis two), that explained at least a marginal significant portion of the variance in the criterion variable ($p < .10$). In all three steps, variables which correlated highest with the criterion variable were entered first into the regression[3].

Table 2 presents the correlations between the variables that feature in the regression analysis.

Results

Feelings of loneliness before and after bereavement

Paired t-tests on the scores before and after bereavement showed some intriguing outcomes (Table 3). As might be expected, the loneliness scores after the death of the partner had increased significantly compared to the scores before the loss. However, the social loneliness experienced before and after bereavement stayed practically the same, whereas the extent to which respondents felt emotionally lonely increased strongly.

Explaining differences in loneliness among the bereaved

Table 4 represents the results of the multiple regression analysis on loneliness as the criterion variable[4]. From the first row it can be read that loneliness at T_0 contributed significantly (14 per cent) to the total of the explained variance (45 per cent) of loneliness at T_1. The two measures are associated with each other in a positive way: the stronger the feelings of loneliness before bereavement, the more loneliness experienced after the partner's death. The other control variables did not add to the explanation of loneliness.

In the second regression step the first hypothesis was tested. The variables entered explained together 22 per cent of the variance in the experienced loneliness at T_1 (Table 4). Each predictor appeared to have a sizeable influence. First, widow(er)s tend to have experienced more loneliness if they had received more support from their partner during marriage. Second, in agreement with our hypothesis, an anticipated death of the partner seemed to have had a differential impact. The higher the perceived intensity of the disease, the less lonely after bereavement. However, talking about death showed an opposite effect to the one predicted: the more often widow(er)s had been talking about death before the partner became ill, the more loneliness was

TABLE 3. *Changes in loneliness* ($n = 134$)

	M_{T0}	M_{T1}	t(132)	p
Loneliness	14.00	16.37	−5.72	< .001
Social loneliness	6.53	6.41	.60	NS
Emotional loneliness	7.47	9.97	−8.57	< .001

TABLE 4. *Multiple regression results for loneliness after bereavement* ($T1$) (n = 110)

Predictors	B	Beta	p	Change in adj.R^2
First regression step				
Loneliness (To)	.259	.282	.001	.140***
Emotional loneliness (To)	_[a]			
Social loneliness (To)	_[a]			
Subtotal R^2				.140
Second regression step				
Support partner (To)	.215	.095	.123	.022#
Evaluation partner relationship	_[b]			
Importance support general	_[c]			
emotional support	_[b]			
instrumental support	.451	.098	.141	.020*
social companionship	.888	.154	.028	.027*
Importance contacts general	_[c]			
kin	−.704	−.179	.013	.013#
Perceived intensity disease	−.389	−.119	.055	.011#
Talking about death	1.086	.167	.013	.027*
Physical condition (IADL)	−.115	−.203	.010	.100***
Subtotal R^2				.219
Third regression step				
Social anxiety	.402	.290	.001	.074***
Support received (To)	−.050	−.150	.025	.016#
Heterogeneity network (To)	_[d]			
Subtotal R^2				.090
Total R^2				.450

\# p < .10; * p < .05; ** p < .01; *** p < .001

[a] This variable was not entered into the regression.

[b] This variable was left out from the final model, because R^2 contribution p > .25.

[c] This variable was left out from the final model, because the R^2 contribution was lower compared to the associated variables.

[d] This variable was left out from the final model, because R^2 contribution p > .10.

experienced after the partner had died. The two other variables that measured the opportunity to anticipate the partner's death, namely suddenness of the death and having the opportunity to say goodbye, did not contribute to the explanation of loneliness.

The third predictor, physical condition, was (as expected) negatively related to loneliness: the more physical restrictions a widow(er) perceived, the more lonely s/he was. The underlying assumption that persons with poor physical health might especially have strong expectations of receiving instrumental support from others, was supported by the strong negative correlation between physical condition and importance attached to instrumental support from others ($r = -.47$; $p < .001$). Physical condition was responsible for almost half of the variance explained.

Finally, the importance attached to support from others and to contact with kin were also found to be meaningful predictors of loneliness, but the direction of the effects was opposite to each other. As was predicted, the more importance attached to (instrumental/social) support from others, the more loneliness was experienced, but – contrary to our expectations – a higher level of loneliness was associated with less importance attached to contacts (with kin).

In the third regression step, the second hypothesis was tested. The first contributor turned out to be social anxiety, which added more than seven per cent to the explained variance of loneliness at T_1 (Table 4). Consistent with our hypothesis, the higher the social anxiety, the stronger the feelings of loneliness after bereavement. Second, widow(er)s seemed to experience more loneliness, if they had received less support from others during marriage. Neither network characteristics nor social dependency during marriage were found to be important variables. Compared with the predictor variables found in the second regression step, social anxiety seemed to be one of the most important determinants of the loneliness experienced after bereavement.

Emotional lonelines versus social loneliness

The results of the hierarchical multiple regression on emotional loneliness and on social loneliness separately are presented in Tables 5 and 6. In the first regression step the control variables were entered. Emotional and social loneliness at T_0 were found to be the only significant predictors of respectively the emotional and social loneliness after bereavement. For both types of loneliness the direction of the effect was similar: the more the respondents felt emotionally (or socially) lonely before the partner had died, the stronger their feelings of emotional (or social) loneliness were after bereavement. Although the regression results clearly showed the impact of the initial level of loneliness on the loneliness experienced after the partner's death, the

TABLE 5. *Multiple regression results for emotional loneliness after bereavement (T1) (n = 108)*

Predictors	B	Beta	p	Change in adj.R^2
First regression step				
Loneliness (To)	_[a]			
Emotional loneliness (To)	.326	.296	.002	.041*
Social loneliness (To)	_[a]			
Subtotal R^2				.041
Second regression step				
Support partner (To)	.193	.122	.083	.048*
Evaluation partner relationship	.091	.169	.042	.009##
Importance support general	.257	.148	.072	.130***
emotional support	_[c]			
instrumental support	_[c]			
social companionship	_[c]			
Importance contacts general kin	.176 _[c]	.221	.019	.019#
Perceived intensity disease	−.384	−.165	.017	.024*
Talking about death	.901	.194	.007	.041**
Physical condition (IADL)	−.089	−.222	.010	.022*
Subtotal R^2				.288
Third regression step				
Social anxiety	.222	.224	.003	.044**
Support received To	−.044	−.188	.010	.028*
Heterogeneity network To	_[d]			
Subtotal R^2				.072
Total R^2				.401

$p < .25$; # $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$

[a] This variable was not entered into the regression.

[b] This variable was left out from the final model, because R^2 contribution $p > .25$.

[c] This variable was left out from the final model, because the R^2 contribution was lower compared to the associated variables.

[d] This variable was left out from the final model, because R^2 contribution $p > .10$.

impact of initial emotional loneliness was smaller (Beta = .296) than the impact of initial social loneliness (Beta = .430). Moreover, emotional loneliness at T_0 explained a much smaller portion of the explained variance of emotional loneliness at T_1 (10 per cent), compared with the contribution of social loneliness at T_0 to the total explained variance of social loneliness at T_1 (62 per cent).

After entering the predictors in the second regression step, some interesting differences between the two types of loneliness emerged. First, variables connected to the partner history and the (anticipated) loss of the partner contributed to the variance of emotional loneliness, but not to social loneliness; they were the perceived intensity of the partner's disease (2.4 per cent), talking about death (4.1 per cent), the

TABLE 6. *Multiple regression results for social loneliness after bereavement (T1) (n = 115)*

Predictors	B	Beta	p	Change in adj.R^2
First regression step				
Loneliness (To)	_[a]			
Emotional loneliness (To)	_[a]			
Social loneliness (To)	.412	.430	.001	.280***
Subtotal R^2				.280
Second regression step				
Support partner To	_[b]			
Evaluation partner relationship	.016	.037	.312	.000
Importance support general	_[c]			
emotional support	−.554	−.167	.014	.006#
instrumental support	_[b]			
social companionship	_[b]			
Importance contacts general	_[c]			
kin	−.489	−.222	.003	.049**
Perceived intensity disease	−.102	−.055	.219	.000
Talking about death	_[b]			
Physical condition (IADL)	−.070	−.218	.002	.048**
Subtotal R^2				.101
Third regression step				
Social anxiety	.180	.233	.001	.059***
Support received To	_[d]			
Heterogeneity network To	.180	.136	.042	.010#
Subtotal R^2				.069
Total R^2				.450

$p < .25$; # $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$

[a] This variable was not entered into the regression.

[b] This variable was left out from the final model, because R^2 contribution $p > .25$.

[c] This variable was left out from the final model, because the R^2 contribution was lower compared to the associated variables.

[d] This variable was left out from the final model, because R^2 contribution $p > .10$.

amount of support received from the partner at T_0 (4.8 per cent) and the evaluation of the partner relationship (0.9 per cent). Similar to the prediction of loneliness (Table 3), the lower the perceived intensity of the disease and the more frequent talking about death before the partner was ill, the stronger the feelings of emotional loneliness after bereavement. Also with regard to the partner relationship it may be concluded that the level of emotional loneliness was higher, the more support from the partner had been received, and the more positively the relationship had been valued.

In comparing emotional loneliness with social loneliness on the importance attached to support as a significant predictor, something striking seems to occur. Whereas the perceived importance of receiving

support was positively related to emotional loneliness at T_1, it turned out that the importance of receiving emotional support was negatively related to social loneliness at T_1. The same held for the importance attached to contacts with kin and/or non-kin. Moreover, for emotional loneliness the support variable was responsible for explaining a larger portion of variance (13.0 per cent) than the contact variable (1.9 per cent), while for social loneliness the contact variable was a much stronger predictor (4.9 per cent) than the support variable (0.6 per cent). Taking into account the amount of variance of the criterion variable explained by the predictors, it may be suggested that the more importance attached to support from others, the higher the emotional loneliness after the loss, but the more importance attached to contacts with kin, the lower the social loneliness.

Finally, physical condition was found to contribute significantly to both types of loneliness at T_1.

The third step regression results revealed that social anxiety was an important determinant of emotional as well as social loneliness: it explained four per cent of the variance in the former (Table 5) and six per cent in the latter case (Table 6). Again, the higher the social anxiety, the higher the level of emotional and social loneliness. Social anxiety was the second important predictor, after the loneliness experienced before the loss, of both emotional loneliness (Beta = .224) and social loneliness (Beta = .233) after bereavement. Regarding network characteristics, the support received from others during marriage was a significant predictor of emotional loneliness, whereas the heterogeneity of the network marginally contributed to the explained variance in social loneliness after the loss. However, the latter finding that a more diverse network during marriage tended to result in a higher social loneliness after bereavement was against expectation, the more so considering the fact that a more diverse marital network was indicative of fewer feelings of social loneliness experienced before the partner's death ($r = -0.35$, $p < .001$). The remaining variables, network size, the representation of children in the network, and social dependency, were not found to be of significance.

Discussion

The aim of this study was twofold. First, we wanted to identify determinants of loneliness experienced shortly after bereavement, taking into account the personal and circumstantial conditions surrounding the death of the partner. Second, we intended to extend

the explanation of loneliness by making a distinction between loneliness through social isolation and loneliness through emotional isolation. The results were analysed within the framework of the Theory of Mental Incongruity (TMI).

The first two research hypotheses were partly supported by the results. More loneliness was associated with the perception of a less intense illness of the partner in terms of medical care, a worse physical condition, more importance attached to receiving support, higher social anxiety, and less support received from the network during marriage. Two unexpected effects were discovered. Respondents who had been talking about death more often and those who attached less importance to contacts, experienced a higher level of loneliness after their partner died. The expectations we had about the factors predicting emotional and/or social loneliness at T_1 (hypotheses 3 to 5) also were not unambiguously confirmed. Variables related to the loss of the partner, such as the absence of support from the partner and a lack of opportunity to anticipate the partner's death, were significant predictors of emotional loneliness only. However, social anxiety significantly added to the explanation of both types of loneliness, while social dependency was not predictive of emotional loneliness experienced after the loss. Furthermore, no evidence was found for the expected relationship between network characteristics and social loneliness. Our last prediction, which dealt with the predictive power of physical condition, was supported: physical condition significantly contributed to emotional as well as social loneliness after bereavement.

Results with respect to indirect measures of standards supported the theoretical hypothesis that dominant partner standards (*i.e.* less opportunity to anticipate the death) as well as dominant support standards of other relationships (*i.e.* poorer physical condition) result in a greater mental incongruity (*i.e.* more loneliness). However, the direct measures of the support standard and the contact standard regarding other ties revealed an opposite pattern: while a dominant support standard was related to greater mental incongruity, a dominant contact standard was indicative of smaller mental incongruity. The distinction between emotional and social loneliness revealed that the prediction concerning the dominance of the standards did apply to emotional loneliness but not to social loneliness after bereavement.

There are several reasons why this theoretical hypothesis received only equivocal support. The findings suggest that in the first grieving period after the loss, when feelings of despair and sorrow dominate, stronger expectations of support or personal contacts also indicate a higher need to compensate for the lost partner relationship, resulting in

a higher level of emotional loneliness. Furthermore, direct measures of standards may reflect a coping attitude in receiving support and/or acquiring and maintaining contacts with others. For example, widow(er)s who are convinced of the unreplaceability of the partner may have lower standards compared to those who have faith in other sources of guidance and support as a compensation for the support that is lost. Also, to protect themselves, widow(er)s may deny that certain needs are important to them (Lazarus and DeLongis 1983; Stevens 1989). Hence, high standards may imply an extrovert coping attitude, whereas low standards may indicate an introvert or self-protecting attitude towards the value or desirability of other ties. If lower expectations result in actually meeting fewer people and receiving less support from others, and thus serve as a self-fulfilling prophecy, feelings of social loneliness may be stronger. More knowledge about coping attitudes in relation to standards will be helpful in interpreting unexpected effects such as were found in this study.

The theoretical hypothesis concerning the favourable effects of the secondary conditions was supported. Mental incongruity (*i.e.* loneliness) was found to be even stronger with fewer perceived opportunities (*i.e.* higher social anxiety) and more factual constraints (*i.e.* less support received from the network during marriage). Nevertheless, the results regarding emotional and social loneliness were somewhat different. Whereas the predicted effect of social anxiety applied to both types of loneliness, the presence of a supportive marital network was predictive exclusively of emotional loneliness after bereavement. Moreover, another interesting, counter-intuitive effect emerged: a more diverse network composition, that is a more favourable secondary condition, tended to enhance feelings of social loneliness. The direction of the effect was quite opposite to what was to be expected on the basis of the TMI. The findings imply that a heterogeneous network does not necessarily mean that more potential sources of effective support are present, compared to a less diverse network. Because close, stable relationships, like those with kin, are thought to be most effective in giving strong emotional support during the first period of grief (Walker *et al.* 1977), the contribution of close contacts in a heterogeneous network may be relatively smaller. Our interpretation is more or less supported by the finding that the importance attached to contacts with kin (and not those with non-kin) is a significant predictor of social loneliness after the loss.

Overall, both for emotional and social loneliness, a large almost equal amount of variance was explained by the factors included in the regression model. However, some differences were found. One of the

most striking *differences* concerns the predictive power of the initial loneliness experienced before the partner died. The feeling of being socially isolated during marriage was the most influential predictor of the level of social loneliness after the partner died. The loss of a supportive partner relationship seemed to have no effect on feelings of social loneliness. The reverse turned out to be true for emotional loneliness. In addition to emotional loneliness during marriage, factors describing the nature and quality of the partner relationship, as well as the circumstances surrounding the death of the partner, were fundamental in explaining the significant increase in emotional loneliness shortly after bereavement.

The findings indicated that widow(er)s who lost a supportive partner reported stronger feelings of emotional loneliness shortly after the loss, compared to those who lost a partner who was less supportive. It seems evident that the emotional reaction to the absence of a more supportive and loving partner relationship will be stronger.

In line with earlier suggestions (Raphael 1984; Walsh and McGoldrick 1991) we found evidence that unanticipated deaths are more likely to be associated with stressful emotional reactions. Although availability of information about the illness was of no influence on the level of emotional loneliness after the loss, salient information about the course of the illness in terms of hospitalisation did have an effect. In our view, the consideration that the partner might die is probably not so easily triggered, because of self-defence coping mechanisms. Denial of the threatened loss may nevertheless be less strong when a person is confronted with a situation in which the partner is clearly helpless and needs to be cared for in a hospital and/or at home. Our results suggest that hospitalisation and/or home-care may weaken this defence mechanism and thus increase the chance that the partner's death is anticipated.

'Saying goodbye', showed no effect whatsoever on the level of loneliness after bereavement. On the other hand, talking about death in general during marriage did show an interesting effect, quite the opposite of what we expected. Widow(er)s who had been talking about death more often felt emotionally more lonely after bereavement. The supposed anticipated coping attitude to a hypothetical death of the partner therefore seems to be more indicative of an anticipated fear to lose the partner. It would be worthwhile to investigate the impact of this coping attitude during marriage on the mourning process.

When we consider the amount of variance of emotional and social loneliness explained by the support standard and contact standard, our results indicate that importance attached to support is especially

predictive of the level of emotional loneliness, while importance attached to personal contacts is a better predictor of social loneliness. This suggestion may be supported by the relationships found between physical health and the standards in question. First, consistent with our assumption, those widow(er)s who perceived many physical restrictions needed more instrumental support from others. The perception of fewer opportunities to interact with people combined with a high need to compensate for the lost instrumental support from the partner may have resulted in higher levels of emotional loneliness after bereavement. Second, a poor physical condition was correlated with attaching less importance to contacts with other persons. It is widely recognised that physical condition is important for the feeling that one is capable of interacting with people. When opportunities to meet people are seen as less favourable, standards of contacts may decrease, reflecting a passive behavioural attitude on initiating and maintaining contacts with others. Hence, anticipating impaired social interaction should lead to stronger feelings of social loneliness experienced after the partner's death.

Social anxiety turned out to be an important predictor of loneliness after bereavement, which is in agreement with earlier findings of Dykstra (1990) and Dykstra and De Jong Gierveld (1994). What is new, however, is the impact of social anxiety on both emotional and social loneliness. Apparently, social anxiety may include not only a social component, concerning the perception of personal opportunities to acquire and maintain social relationships, but also an emotional component regarding the basic feeling of having a reliable attachment to others. The positive relationship between social anxiety and importance attached to support suggests that a high social anxiety may intensify the need to compensate for the lost partner relationship.

In conclusion, the present study is of both theoretical and empirical interest. First, our findings have shown that both personality characteristics and circumstantial conditions influence the level of loneliness experienced shortly after bereavement. Second, although previous research (Dykstra and De Jong Gierveld 1994) has demonstrated that more dominant standards are associated with higher levels of loneliness, we were not able unambiguously to support this theoretical prediction. Our findings stress the need to understand how standards develop and in what way coping mechanisms influence the needs and desires of widow(er)s regarding support or personal contacts. Widow(er)s who perceive their environment as non-responsive or feel that their contacts fail to meet their needs, will be more at risk of experiencing a poor outcome (Maddison and Walker 1967). Achieving

an accurate understanding of how newly bereaved older persons adapt emotionally and socially to the loss of their partner may need a *specific* coping model going beyond more general behavioural or coping theories (Stroebe *et al.* 1996). Third, the distinction between a social and an emotional loneliness component is relevant: it provides us with new insight into the predictive power of the personality and social factors identified in previous research, and it contributes to the interpretations of our findings. Measures of loneliness gathered before the partner died (T_0), are essential in the explanation of loneliness after bereavement. Consistent with other studies (Raphael 1984; Weiss 1973), the significant increase in emotional loneliness after the loss, and the seeming 'stability' in social loneliness, seems to support the notion that widow(er)s are especially vulnerable to the experience of being emotionally isolated. Finally, we found evidence for our hypothesis that circumstances surrounding the death of a partner are important for the extent to which newly bereaved older adults feel lonely. Our finding contradicts the suggestion that losing a partner at an older age is, even when sudden, not totally unexpected (Raphael 1984). Rather it supports the view that a greater mutual involvement between older wives and husbands, for instance following retirement, 'leads to a severe disruption in the daily life' of the widow(er)s (Stevens 1989: 46). Further research is needed to bolster the finding that unanticipated deaths are likely to affect the outcome of bereavement for both older and younger widow(er)s.

Acknowledgements

The Widowhood Adaptation Longitudinal Study (WALS) is supported by a grant from the Netherlands Organisation for Scientific Research (NWO) (nr. 510–77–603). The project is a sub-study of the research 'Living arrangements and social networks of older adults', which is supported by a programme grant from the Netherlands Programme for Research on Aging (NESTOR). NESTOR is funded by the Ministry of Education and Sciences and the Ministry of Health, Welfare and Sport. The authors would like to thank their colleagues Marjolein Broese van Groenou and Simone Lamme for designing the study and developing the questionnaire.

NOTES

1 Levene's test for equality of variances showed that the variances of the two group means were not equal.
2 A Mokken Scale Analysis is a probablistic version of the Gutman scaling (Mokken and Lewis 1982).

3 One predictor variable, evaluation of the partner relationship, correlated very highly with loneliness ($r = -0.55$, $p < 0.001$) and emotional loneliness ($r = -0.59$, $p < 0.001$) experienced before the partner's death. Because the correlation between this predictor and *social* loneliness before the loss was much lower ($r = -0.39$, $p < .001$), and the other independent variables were also less strongly associated with the initial measures of loneliness, we decided not to use the loneliness difference scores (T_1-T_0) as the dependent variables. Instead, we entered the loneliness score at T_0 as a covariate into the regression.

4 Tests were conducted to check for violations of assumptions of normality and linearity. Cases with one or more missing values that could not be replaced or reasonably estimated were removed from the analyses.

References

Bankoff, E. A. 1983. Social support and adaptation to widowhood. *Journal of Marriage and the Family*, **45**, 827–39.

Broese van Groenou, M. I. 1991. *Gescheiden Netwerken*: *De Relaties met Vrienden en Verwanten na Echtscheiding* [Separated networks: Relations with friends and relatives after marital separation]. Unpublished doctoral dissertation, Rijksuniversiteit Utrecht, Utrecht, The Netherlands.

Clayton, P. J., Halikas, J. K., Maurice, W. L. and Robins, E. 1973. Anticipatory grief and widowhood. *British Journal of Psychiatry*, **122**, 47–51.

Coleman, P. 1990. Adjustment in later life. In Bond, J. and Coleman, P. (eds), *Ageing in Society*. *An Introduction to Social Gerontology*. Sage, London, 89–122.

Dykstra, P. A. 1990. *Next of (Non)kin: the Importance of Primary Relationships for Older Adults' Well-being*. Swets and Zeitlinger, Amsterdam.

Dykstra, P. A. and Jong Gierveld, J. de. 1994. The theory of mental incongruity, with a specific application to loneliness among widowed men and women. In Erber, R. and Gilmour, R. (eds), *Theoretical Frameworks for Personal Relationships*. Lawrence-Erlbaum, NJ. 235–59.

Glick, I. G., Weiss, R. S. and Parkes, C. M. 1974. *The First Year of Bereavement*. John Wiley, New York.

Holmes, T. H. and Rahe, R. H. 1967. The social readjustment scale. *Journal of Psychosomatic Research*, **11**, 213–18.

Jong Gierveld, J. de. 1989. Personal relationships, social support and loneliness. *Journal of Social and Personal Relationships*, **6**, 197–221.

Jong Gierveld, J. de. and Kamphuis, F. H. 1985. The development of a Rasch-type loneliness scale. *Applied Psychological Measurement*, **9**, 289–99.

Jong Gierveld, J. de. and Dykstra, A. P. 1993. Life transitions and the network of personal relationships; theoretical and methodological issues. *Advances in Personal Relationships*, 4, 195–227.

Knipscheer, C. P. M., Jong Gierveld, J. de, Tilburg, T. G. van. and Dykstra, P. A. (eds), 1995. *Living Arrangements and Social Networks of Older Adults*. VU University Press, Amsterdam.

Lazarus, R. S. and Folkman, S. 1984. *Stress*, *Appraisal and Coping*. Springer Publishing Company, New York.

Lazarus, R. S. and DeLongis, A. 1983. Psychological stress and coping in ageing. *American Psychologist*, **38**, 245–54.

Lopata, H. Z. 1969. Loneliness: forms and components. *Social Problems*, **17**, 248–62.

Lopata, H. Z. 1979. *Women as Widows: Support Systems*. Elsevier, New York.

Lund, D. A., Caserta, M. S. and Dimond, M. F. 1993. The course of spousal

bereavement in later life. In Stroebe, M. S., Stroebe, W. and Hansson, R. O. (eds), *Handbook of Bereavement: Theory, Research and Intervention*. Cambridge University Press, Cambridge, 240–54.

Maddison, D. and Walker, W. L. 1967. Factors affecting the outcome of conjugal bereavement. *International Journal of Psychiatry*, **113**, 1057–67.

Mokken, R. J. and Lewis, C. 1982. A nonparametric approach to the analysis of dichotomous item responses. *Applied Psychological Measurement*, **6**, 417–30.

Moorer, P. and Suurmeijer, T. P. B. M. 1993. Unidimensionality and cumulativeness of the loneliness scale using Mokken Scale Analysis for polychotomous items. *Psychological Reports*, **73**, 1324–26.

Münch, R. 1972. *Mentales System und Verhalten: Grundlagen einer allgemeinen Verhaltenstheorie* [Mental system and behaviour: Foundations for a general behavior theory]. Mohr, Tübingen, West Germany.

Parkes, C. M. and Weiss, R. S. 1983. *Recovery from Bereavement*. Basic Books, New York.

Raphael, B. 1984. *The Anatomy of Bereavement; a Handbook for the Caring Professions*. Hutchinson and Co, London.

Rolland, J. S. 1991. Helping families with anticipatory loss. In Walsh, F. and McGoldrick, M. (eds), *Living Beyond Loss: Death in the Family*. Norton, New York, 144–63.

Schut, H. A. W. 1992. Omgaan met de dood van de partner: effecten op gezondheid, effecten van rouwbegeleiding. [Coping with the death of the spouse: effects on health, effects of grief counseling]. Thesis Publishers, Amsterdam.

Stevens, N. L. 1989. *Well-being in Widowhood: a Question of Balance*. Unpublished doctoral dissertation, Katholieke Universiteit Nijmegen, The Netherlands.

Stevens, N. L. 1995. Gender and adaptation to widowhood in later life. *Ageing and Society*, **15**, 37–58.

Stroebe, M., Schut, H. and Stroebe, W. 1996. Rouw en trauma beschouwd: Over de noodzaak van een specifiek model voor verliesverwerking [Grief and trauma: On the need for a grief-specific model of coping]. *Gedrag & Gezondheid*, **24**, 199–206.

Stroebe, W. and Stroebe, M. S. 1993. Determinants of adjustment to bereavement in younger widows and widowers. In Stroebe, M. S., Stroebe, W. and Hansson, R. O. (eds), *Handbook of Bereavement: Theory, Research and Intervention*. Cambridge University Press, Cambridge, 208–26.

Tazelaar, F. 1983. Van een klassieke attitude-gedragshypothese naar een algemeen gedragstheoretisch model [From a classical attitude-behavior hypothesis to a general theoretical model of behavior]. In Lindenberg, S. and Stokman, F. N. (eds), *Modellen in de sociologie*. Van Loghum-Slaterus, Deventer, The Netherlands, 112–38.

Tazelaar, F. and Wippler, R. 1985. Problemspezifische anwendungen der algemeinen theorie mentaler inkongruenzen in der empirischen sozialforschung [Problem-specific applications in empirical social research of the general theory of mental incongruity]. In Büschges G. and Raub, W. (eds), *Soziale Bedingungen – Individuelles Handeln – Soziale Konsequenzen*. Lang, Frankfurt am Main, 117–79.

Tilburg, T. van. 1995. Delineation of the social network and differences in network size. In Knipscheer, C. P. M., Jong Gierveld, J. de, Tilburg, T. G. van. and Dykstra, P. A. (eds), *Living Arrangements and Social Networks of Older Adults*. VU University Press, Amsterdam, 83–96.

Tilburg, T. G. van. and Leeuw, E. D. de. 1991. Stability of scale quality under various data collection procedures: A mode comparison on the 'De Jong Gierveld Loneliness Scale'. *International Journal of Public Opinion Research*, **3**, 69–85.

Thomae, H. 1970. Theory of ageing and cognitive theory of personality. *Human Development*, **13**, 1–16.

Walker, K. N., MacBride, A. and Vachon, M. L. S. 1977. Social support networks and the crisis of bereavement. *Social Sciences and Medicine*, **11**, 35–41.

Walsh, F. and McGoldrick, M. 1991. Loss and the family: a systemic perspective. In Walsh, F. and McGoldrick, M. (eds), *Living Beyond Loss: Death in the Family*. Norton, New York, 1–29.
Weiss, R. S. 1973. *Loneliness: the Experience of Emotional and Social Isolation*. MIT Press, Cambridge, Mass.

Accepted 20 May 1998

Address for correspondence:
Berna van Baarsen, Department of Sociology and Social Gerontology, Vrije Universiteit Amsterdam, De Boelelaan 1081c, 1081 HV Amsterdam, the Netherlands.